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## **AGRICULTURE DEVELOPMENT FUND**

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### ***FINAL REPORT***

20070012

**JAPANESE HASKAP MARKET ASSESSMENT PROJECT**

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# Haskap Market Development -The Japanese Opportunity-

Feasibility Study  
August 2007



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**To the attention of:** Parkland Agroforestry Products Inc.  
Saskatchewan Agriculture and Food

I would like to thank you for the opportunity to undertake this project. I trust that the following report will satisfy the agreement made between us, and hope that the information contained in this report will be useful to your organizations as was intended.

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## **1 Summary of Findings**

This project is a market development feasibility study, and represents the first stage of the development of the Saskatchewan haskap industry. A trip to Hokkaido, the northern island of Japan, and the main production area in the world, allowed to draw a picture of the present haskap market. This study attempts to assess the potential for Canadian haskap to be marketed in Japan.

### **The Existing Supplies of Haskap in Hokkaido**

The Japanese haskap market is a sensitive sector. The production of haskap crashed in the early 1980s to a third of its size, because of the economic recession and a drop in fruit prices. The market is slowly recovering, and total production of fresh berries increased from 85 tons in 1999 to 120 tons of in 2005. Haskap involves a labour intensive harvest. Only a few young farmers are interested in installing new orchards, and growers are mostly older people. Supply is limited by manual harvesting and shortage of labour, and is however sufficient for the actual Hokkaido market. No marketing effort has been done by the Hokkaido haskap industry to expand the market in Japan, and the actual potential to commercialize haskap there is low.

### **Structure of the Haskap Industry**

The Hokkaido haskap industry is complex, with several levels including the producers, the Co-operative groups, the traders, the processors, the wholesalers, and the retailers. This industry is not integrated. It includes 150 growers and only 3 major processors. The processors market different products, but target a similar consumers' segment.

### **Size and Scope of the Haskap Market in Hokkaido**

Size of the market is small, with a total of 120 tons of fresh berries harvested, and 92 tons of berries processed in 2005. These numbers are recorded by Japan Agriculture, and the market of fresh berries is larger because producers sell fresh berries in farmers markets out of the JA system. The quality expectations of the processors are very high, and local producers harvest, sort, and grade the berries manually. Haskap products are highly priced, and trademarked as local products.

This state of the industry erects a barrier to entry into this market. Foreign products have to attain an excellent level of quality to satisfy the Japanese processors.

**Consumers' Segment**

Hokkaido haskap products are highly priced for the gift market. Processors target consumers from the upper-middle, and upper class. One of the major processors describes its typical consumer as being a wealthy woman in her 50's. Consumers purchase haskap products for souvenirs and special occasions.

**Types of Haskap Products Available**

The real size of the fresh fruit sale sector is difficult to assess, because most of these sales are not recorded. According to different sources, the volume of fresh fruit sales could be comprised between 50 tons and 100 tons/year.

The processed products sector is characterized with a wide range of confectionery products commercialized in Hokkaido for the gift market. No product is commercialized for the daily consumption market.

**Acceptability of Saskatchewan Grown Haskap**

The Hokkaido haskap industry sets very high quality standards, making it difficult for foreign products to compete with the local production. However, Canadian agricultural products are well perceived in Japan, and processors are curious to taste the upcoming production.

The Japanese government plans to install a new law on food product labelling. Japan-made products will have to display clearly their content in raw products coming from other countries. This new law will be a new barrier to export haskap to Hokkaido. It is unlikely that a consumer will welcome a souvenir from Hokkaido containing a significant percentage of Canadian fruit.

**Quantity of Saskatchewan Grown Haskap to be exported to Japan**

The need for additional haskap supply on the Hokkaido market is minimal in the actual state of the market.

The potential to market Saskatchewan haskap berries in Japan would become larger if the haskap market is successful in expanding to the main island of Japan. However, this potential remains unknown, as it will depend on the strategy developed by the processors to expand to this market.

Canadian haskap growers cannot rely on the Japanese market to commercialize their production and secure their orchard development. There might be some opportunities in the long term for further development in Japan, but the market today is very small.

**Recommendations for the short term market development:**

**Recommendation # 1:**

Plan for a conservative development and expansion of the orchards, in order to wait for the Japanese market to grow, and for the North American market to be developed. Fifty tons of additional haskap on the international market is sufficient for the current stage of the market.

**Recommendation # 2:**

Build collaborations with the Hokkaido haskap processor to develop commercial and promotion strategies to reach consumers in the main island of Japan

**Recommendation # 3:**

Build collaborations with the main three processors in Hokkaido to assess the possibility to develop new haskap confectionary products specially made with Canadian haskap. These new products would be commercialized to new consumer segments in Hokkaido and the Japan main land to avoid direct competition with established products

**Recommendation # 4:**

Build interest in haskap to induce market demand in Canada

**Recommendation # 5:**

Start to build a list of interested customers

**Recommendation # 6:**

Engage in further business development studies, to assess the potential North American market, and to assess the possibilities to develop haskap processing in Saskatchewan.

**Recommendations for the medium term market development:****Recommendation # 7:**

Position haskap with a farm-gate price between \$2.00 and \$3.00 on the Canadian market

**Recommendation # 8:**

Build a close relationship with Hokkaido processors, and build confidence in the Canadian berry quality. Develop an understanding of the reliability of the mechanical harvesting.

**Recommendation # 9:**

Do not commercialize Canadian haskap as a fresh product in Hokkaido. The expense would be greater than the revenue, making this option not feasible.

**Recommendation # 10:**

Strive for high quality standards, according to the Japanese definition, in order to place the Canadian haskap ahead of the competition.

**Recommendation # 11:**

Rather than exporting frozen berries to Japan, develop a pre-processed product well adapted to exporting, and also adapted to the needs of the processors.

**Recommendation # 12:**

Consider vertical integration to perform a first stage of berry processing on-farm, and to retain additional returns.

**Recommendation # 13:**

Collaborate with Dr. Bors in Saskatoon, and with Dr. Ukai in Hakodate to test new varieties, for content in health compounds.

The health food sector might not be the best fit for the Canadian haskap due to the sweeter taste of the berry. Minimum marketing effort should be allocated to this sector.

**Recommendations for the long term market development:****Recommendation # 14:**

Develop a strategy to use Canadian haskap in specific delicacies in Japan as the new regulations will make it difficult to market a Hokkaido product which contains Canadian haskap content.

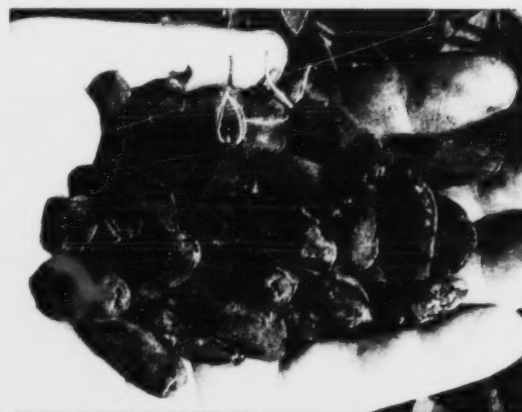
**Recommendation # 15:**

Keep the Canadian haskap industry simple and integrated. The export price of Canadian haskap frozen or pre-processed will not be sustainable for an industry with many players.



## 2 Introduction

The Honeyberry (*Lonicera caerulea*) is also known as haskap, haskup, haskaap, or hasukappu in Japan. The plant originates from Central and Western Eurasian continent, and was used by the Ainu people, the aboriginal people of Hokkaido, for its medicinal properties. The early and prolific production of berries is the reason for the naming of the plant. In the Ainu language, Haskap means “lot of little things on top of the branches”.



Pictures 1 and 2: Haskap bush and berries (B. Bors)

Japan is an archipelago composed of four islands: Kyushu, Shikoku, Honshu, and Hokkaido. The largest island, Honshu hosts most of the Japanese population. Hokkaido is the northern island of the archipelago. It is the main agricultural production area for Japan and it has developed a strong image of quality for its local production. The Ubari Melon, a locally grown cantaloupe, is certainly the best example of high quality and price positioning, with fruits being sold on the Tokyo market up to \$90.00 per piece. Haskap benefits from this perception of the Hokkaido agricultural production quality. Local confectionery companies, such as Mitsuboshi and Hori, have a complete line of haskap products. These products are marketed in their own stores, located in downtown areas, upper-scale shopping malls, or airports. Fancy packaging and high prices make haskap products special for souvenirs and gifts for specific occasions.

Little promotion is done for haskap. The industry relies on local sales, and does not advertise on Honshu, the main island of Japan. Japan Agriculture (JA) assists farmers in the production and



commercialization of the fruits, and scientists are able to get funding for specific research projects such as characterization of medicinal compounds, or mechanisms developed by the plant to resist the frost. However, there is no overall strategy at the government levels, federal and provincial, to promote haskap production.

Haskap production in Japan is traditional; berries are handpicked and sorted twice by hand, before being sent to the processors. Supply is limited caused by the shortage of labour. Most farmers are older people, and only a few young farmers are showing interest in running haskap orchards. This is a concern to the haskap processors who cannot rely on a consistent source of supply for their confectionary products. In 2005, a Japanese trading company approached the Saskatchewan berry industry to investigate the possibilities to purchase Canadian haskap for the Japanese market. The trading company showed that there is an immediate need of 200 tons of berries per year on the Japanese market, with the amount possibly growing up to 1,200 tons of berries in 2012. The expression of interest from the Japanese haskap industry, and the new haskap varieties becoming available through the U of S, led the Saskatchewan growers to started planting haskap orchards, with the goal to reach 750 acres in 2012. However, the orchard growers needed to have a better picture of the potential haskap market. Parkland Agroforestry Products Inc. (PAP), assisted by Saskatchewan Agriculture and Food (SAF) commissioned the present feasibility study.

### 3 Project Objectives

The haskap plant is able to grow and produce fruit in Saskatchewan, and a market exists in Japan. The aim of this market feasibility study is to draw a picture of the actual and the potential haskap markets in Japan which will assist in setting a base and for developing a marketing strategy for the Saskatchewan production. The preliminary phase of the feasibility study allowed us to obtain, from the Hokkaido Department of Agriculture, a summary of the haskap production and uses since 1999. The data gathered did not reflect the market needs presented previously to the U of S. The Japanese trading company expressed a need of 200 tons of haskap per year as soon as possible, this amount possibly increasing to 1,200 tons by the year 2012. However, the haskap production in Hokkaido totalled 120 tons in 2005. According to a market development perspective, it would be difficult to double instantly the volume of sales of a fruit on a local market, and even more difficult to multiply this market by ten within seven years. We were unable to gather enough information on the haskap market, through the resources available from Canada. To collect primary data, it was decided that the feasibility study would include a trip to Hokkaido.

The trip to Hokkaido was organized to meet with key stakeholders of the Haskap sector: - Representative from the Hokkaido Department of Agriculture and Food Research Centre - Representative from the University of Hokkaido - Haskap growers – a Haskap broker - Haskap processor - Haskap product retailers (Complete list of contact persons in Annexe 1). The meetings with the industry players were intended to draw a picture of the potential market need for haskap in Hokkaido and Japan. The goals of the market study trip were as follows:

- To identify the existing supplies (domestic and import) of haskap in Hokkaido and Japan;
- To identify the structure of the haskap industry (number and size of stakeholders);
- To identify the size and scope of the Haskap market in Hokkaido and Japan;
- To identify the consumers' segment (characteristics);
- To identify the various types of haskap products available on Japanese store shelves;
- To assess the acceptability of Saskatchewan grown haskap;
- To assess the quantity of Saskatchewan grown haskap to be exported to Japan;
- To assess the potential range for - Retail price - Wholesale price - Import FOB Japan price, at which Saskatchewan haskap could be marketed.

## 4 Methodology

- Phase one: Preliminary research, January 2007-March 2007.

Once the research project was accepted, extensive search for information was made via the Internet. Very little information is available in English, and almost none directly from the Japanese perspective. A few people were contacted, however there was not enough information gathered for a solid study. Ms. Noriko Kawagushi, a Japanese colleague, assisted in the search for available information in Japanese. Ms. Kawagushi was able to obtain from the Hokkaido Department of Agriculture a summary table of haskap production and its use over the past 6 years. She was instrumental in finding information and contact numbers for additional people, in the scientific research field, and for the growers groups in the main haskap production areas. A preliminary report was written, part of the MBA 848 class and submitted to Dr. C. Houliez and Dr. B. Dobni (Edwards School of Business), Dr. B. Bors (College of Agriculture and Bio-resources), Mr. B. Sim (SAF), and Mr. Carl Barber (PAP).

- Phase two: Organization of the market research trip, April 2007, June 2007.

The historical haskap production data obtained clarified the misalignment of the market history and the export goals of the Japanese trading company. A more thorough study had to be performed, however the lack of available information made it difficult to perform the study using secondary information. Japan has a conservative business environment making it unlikely to access critical information by phone, without personally knowing each other. The decision to organize a research trip to Hokkaido was made by PAP and an application for funding was made to SAF. Once the application was granted, the process to contact key people in Japan started. The protocol was to initiate contacts in a hierarchical order, from government institutions, to universities, growers groups, and individual processors traders and producers. Thanks to the assistance of Ms. Kawagushi, contacts were initiated in the Japanese language and remained in Japanese for most of the contact persons. The schedule of the trip was set-up to visit first with the government representatives and the scientists, and then with the other stakeholders in the industry. This hierarchical process allowed us to access the growers groups and processors with the recommendation from government representatives or scientists. We faced numerous challenges in organizing the meetings to be able to meet with everyone within the 10-day

research trip. We were successful and by early June, meetings with all targeted groups were scheduled (meeting schedule in Appendix 3). Hotel rooms, car rental, and interpreter services were booked during this period. Meeting reminder and thank-you letters were sent the week prior to the trip.

- Phase three: Research Trip, June 18<sup>th</sup> – June 27<sup>th</sup>.

All the meetings were attended on time, coordinated by our interpreter who confirmed, in advance, our arrival to the meetings. We provided to all persons we met, with gifts selected from the Saskatchewan made store (Saskatoon), thereby advertising the products of our province. Protocol was respected at each meeting, introducing people in a hierarchical order, presenting business cards, and sitting around the meeting table according to people's ranks. Within our group, Mr. Carl Barber was introduced as the key person for PAP, Mr Larry White (PAP) was introduced in second, Mr Ryo Minoue (independent business person and trader) was introduced third, and E. Lefol was introduced last. The interpreter of the group, Ms. Sara Hashimoto, was sitting in an intermediate position between the Japanese-speaking hosts and the English-speaking guest during meetings. An additional visit to a jam processor in the city of Furano was added to the schedule during the first part of the trip.

The research trip raised interest from the Hokkaido community. Our group was interviewed by a local paper, at their request. The group was also interviewed by the press at the request of one of our interviewees. One of the business members with whom we had scheduled a meeting, invited us to attend an informal meeting with Mr Hirotaka Nakano, deputy mayor of Tomakomai, the largest industrial port of Hokkaido.

- Phase four: Consolidation of the data, and writing of the feasibility study report, July 2007 – August 2007.

Thank you letters were sent to the persons we met in Hokkaido. Articles collected during the trip were translated, and information organized into a report.

## 5 Background on the Haskap Plants and Products Available in Hokkaido

### 5.1 The Haskap Plant

The haskap berry has a complex taste that is compared to a variety of other berries, such as the blueberry, the raspberry, the blackberry, or the black currant. The natural accessions and varieties provide a large range of taste, sweetness, tartness, and acidity.

Haskap users describe the quality of the berry differently, according to its end-use. The fresh market prefers the large and sweet berries. Mitsuboshi Co. requires a pH=2.3 to 3 for juice, and Hori Confectionery prefers pH=3.5 for jelly. Furano Jam Co. prefers wild haskap bitterness and complex flavour over the selected cultivars.

Yufutsu is the only cultivar registered in Japan by JA, and numerous unregistered selections are available for the growers. Among the popular selections are the Yushige, and the Chitose series, from Chitose number 1 to Chitose number 9 (varieties 1 and 3 featured in the chart below).

Table 1: Characteristics of the main haskap varieties grown in Hokkaido

Varieties	Avg. Flowering date	Avg. Harvesting date	Avg. Berry Weight (g.)	Sugar (%)	Acidity (g/100ml)
Chitose 1	May 21	July 10	1.8	12.6	2.9
Chitose 3	May 22	July 15	1.9	12.9	2.7
Yushige	May 20	July 08	1.8	12.9	2.2
Yufutsu	May 16	July 05	1.5	12.1	2.9

Source: Haskap Production Manual, Published by Japan Agriculture, division of Tomakomai.

Haskap is a self-incompatible plant meaning a plant requires a plant from another variety for pollination purposes and to produce fruit. Growers alternate several cultivars in their orchards in order to get good pollination between plants and to obtain good fruit yield. Fruits from a given orchards are bulk-harvested, and are commercialized in bulk. The existing system does not allow differentiation of cultivar, and customers do not get used to a specific cultivar.

Haskap is traditionally harvested by hand, and also selected and graded by manually. This high quality haskap is then sold for the fresh market, and also to processors. Processors are therefore used to very high quality handpicked berries. Their criteria of quality when purchasing berries are based on the aspect of the whole berry and the consistency in grade.

Haskap products are gift products for special occasions. High prices and fancy packaging emphasize the high quality of the products.

### 5.2 The Golden Remedy for Longevity

One of the Hokkaido processors markets a haskap concentrated juice as a "Golden Remedy for the Eternal Youth and Longevity" (picture 3). This health statement comes from the tradition of aboriginal Ainu People. This people traditionally picked the haskap berry and believed in its medicinal properties.



Picture 3: Label for a haskap juice bottle

Haskap is believed to have a variety of therapeutic effects such as:

- Reducing blood pressure
- Preventing hardening of blood vessels
- Decreasing risk of heart attack
- Decreasing risk of diabetes



- Reducing effects of glaucoma
- Preventing anaemia
- Providing curative effects for malaria and gastrointestinal diseases
- Strengthening bones in kids and preventing osteoporosis
- Preventing children hyperactivity
- Slowing the aging process
- Softening and providing elasticity to the skin

Modern studies are re-enforcing this traditional knowledge, showing that Haskap has vitamin C content, as well as antioxidant (anthocyanins and phenolic compounds) (2). Recent research led by Dr. Ukai, Hokkaido University of Education, is conducted on the potential properties of Haskap as an anti-carcinogen agent. These properties seem to be associated with the bitterness compounds of the wild haskap.

The Chinese haskap production is mostly from unimproved varieties, and is characterized by bitter fruits. Recent publications show that the Chinese haskap industry is positioning its products in Japan, using this anti-cancer statement. This strategic positioning of this product, with a possible further development with the nutraceutical industry may eventually have a beneficial effect on the whole haskap industry.

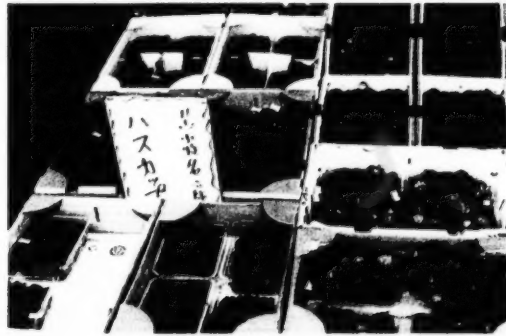
Table 2. Main compounds of haskap compared with to fruits

Compounds	Content per 100 g of fresh fruit			
	Haskap	Plum	Grape	Tomato
Water	87.5	90.1	84.4	95.0
Protein	1.1	0.7	0.5	0.7
Fat	3.1	1.6	0.2	0.1
Sugar	3.5	6.5	14.4	3.3
pH	3.4			
Calcium (mg)	59.0	12.0	6.0	9.0
Phosphorus (mg)	48.0	14.0	13.0	18.0
Iron (mg)	0.2	0.6	0.2	0.3
Vitamin C (mg)	65.0	6.0	4.0	20.0

Source: Haskap information page, Kami Furano. <http://hp.town.kamifurano.hokkaido.jp/hp/saguru/151119hasu.htm>

Japanese people are concerned with the quality of their food, and with the health benefits of natural products. Therefore, a fruit like haskap has the potential to reach a large consumer segment, larger than the established gift market segment.

### 5.3 Haskap Products



Picture 4: Display at a farmers' market in Tomakomai, with haskap, cherries, and strawberries

The haskap berries are found as fresh products in farmers markets and supermarkets in July and August (picture 4). The market size, as recorded by JA, averages 30 tons per year, since 1999. This represents a quarter of the production of haskap traded through the co-operative system of JA. This side of the market is not well known, as growers can market the berries themselves. There is no control board to track the total sales of haskap in Hokkaido. Personal communications with growers and JA workers show estimates of total annual Hokkaido haskap production fluctuating from 140 tons to 200 tons (120 tons in 2005 recorded by JA).

In addition to the seasonal consumption, haskap is frozen, and further processed into cakes, biscuits, candies, chocolates, jam, jelly, wine, juice, soft drink, gum, or flavoured noodles. The processors we visited in Hokkaido offer a wide range of products representing a good overview of the available items.



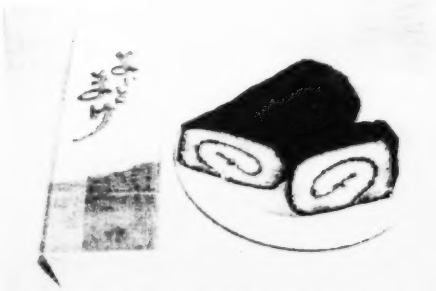
- **Mitsuboshi** manufactures over 10 different types of cakes with haskap, plus other products.

The most popular are following:

- Haskap Jewellery (Biscuit with cream cheese and haskap jam). Most famous product, generating ¥5,000,000 (\$45,430CND) revenue per year (Picture 5).
- Rolled cake with haskap jam, whole cake or individually wrapped portions (Picture 6)
- Haskap cheese soufflé
- Haskap mist, haskap cup-cake (Picture 7)
- Haskap tea biscuit
- Haskap jelly
- Hand made jam (Picture 8)
- Fruit paste
- Sweat bean paste with haskap



Picture 5: Haskap Jewellery



Picture 6: Haskap Rolled Cake



Picture 7: Haskap Mist



Picture 8: Hand Made Jam

(Pictures 5 to 9 from M. Ukai)

- **Maruzen** is a soft drink company commercializing haskap lemonade. The soft drink generated ¥4,000,000 (\$36,432CND) revenue in 2006 (Picture 9)
- **Haskap Services** manufactures a haskap tea
- **Chitose Grace winery** produces a range of haskap wines (Picture 10), and juices.
- **Hori confectionery** manufactures haskap jelly, fruit juice, and a concentrated juice



Picture 9: Haskap Lemonade



Picture 10: Haskap Wine

## 6 Overview of the Haskap Industry in Hokkaido

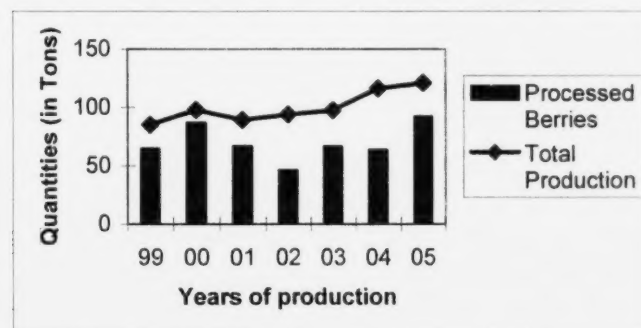
The haskap industry is dominated by the confectionery sector generating value added to the product. However, this industry cannot rely on a stable source of supply because of several factors:

- Farmers invest minimum assets in haskap production
- Orchards are maintained as a side business
- Harvesting is performed traditionally, manually, as it has been done for many years.

Confectionery, as other luxury products, was seriously hit by the latest episode of economic recession of Japan in 2001-2002. The amount of processed haskap dropped 50% from 2000 to 2002 (Figure 1). The recovery of the market was helped by a health TV-show broadcasted on two national TV channel: "Spa Spa Ningen-gaku" and "Pittanko Kan-kan" who had the objective of informing people of potential health benefits of food, and haskap was highlighted. This show was not planned or sponsored by the haskap industry, but it arrived at the right in time to revitalize the industry. Sales volumes increased, price in 2003 recovered the 2000 level, and price is still growing (Figure 1).

On the contrary of processed products, the total berry production does not seem to be affected by economic conditions. The tonnage of harvested berries has increased slowly and regularly from 1999 to 2005 (Figure 1). The variation in the processed berries market has experienced more fluctuations, showing the flexibility of the haskap market. The growers can sell their berries to the processors or to the Hokkaido local consumers, as a fresh produce.

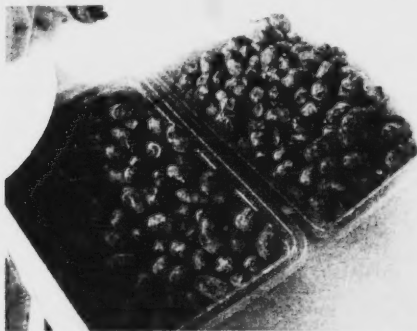
Figure 1: Production and processing of haskap from 1999 to 2005 in Hokkaido



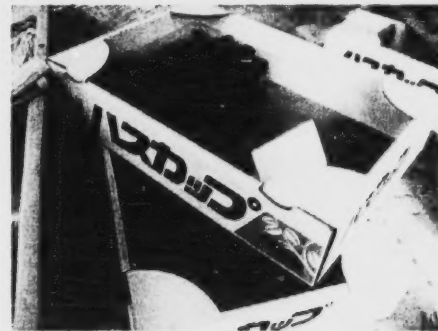
Source: Hokkaido Government, Department of Agriculture, Agricultural Production Promotion Division.  
Data shown in Appendix 1.

### 6.1 The Haskap Value Chain

Haskap is a minor crop in Hokkaido compared with rice and cereals, but the sector is well developed, with many levels in the industry chain (Figure 2). Traditionally, haskap fruit is picked by hand, sorted a first time in the field and small and damaged berries are discarded. The best looking berries are stored in 300 g plastic trays arranged in a cardboard box which is brought the same day to the local JA office (Pictures 11 and 12).



Picture 11: 300 grams plastic trays

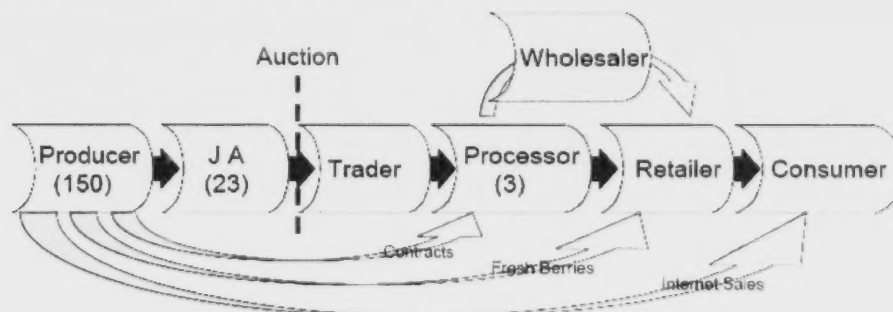


Picture 12: Boxes of four trays

The JA staff will do the second sorting and grading of the berries. Berries are either kept in trays for selling fresh, or frozen. The JA office of a rural municipality will then bring the local production to the regional auction site to market it, at the best price. Traders will purchase the berries for their customers in the processing industry. Most processors have their own retail stores where their products are sold. The remaining haskap is sold to wholesalers. Wholesalers distribute haskap products to retailers.

Producers and processors try to shorten the supply chain using direct sales of fresh products, or Internet sales.

Figure 2: The Hokkaido Haskap Value Chain



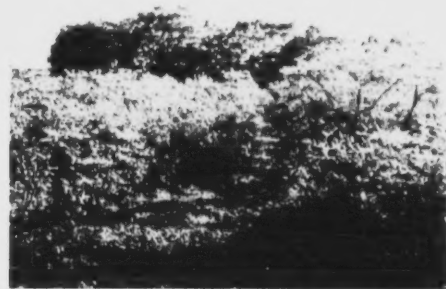
## 6.2 The growers

There are 23 municipalities listed by the Hokkaido Department of Agriculture as producing haskap, which includes 150 growers and a total orchard area of 85ha. Total production traded by JA equalled 120 tons in 2005. This does not include the possible 80 tons sold directly at the farm gate. Today, the growers are the critical link in the value chain. Most haskap growers are older farmers who manage a haskap orchard as a side business for their farm. Very few young farmers appear to be interested in growing haskap.

There is a large difference in ways orchards are managed. Most of the orchards, visited during this research trip, have low plant management techniques, including: the spraying of an insecticide early in the season, the mowing of the grass between the haskap rows before harvesting, and the pruning of the haskap plant every two or five years. Some of these orchards are planted with haskap plants collected in the wild (Pictures 11 and 12). Some orchards have higher plant management techniques, a better weed control, either with rice straw (Picture 15), mulch, carpet, or weed screen and pruning to control the tree shape and the berry production.



Picture 13: Haskap orchard in the Tomakomai area



Picture 14: Haskap orchard in the Tomakomai area



Picture 15: Modern orchard in the Tomakomai area



Picture 16: U-Pick farm in the Bibai area

(Pictures 11 to 16 from R. Minoue)

### **6.3 Japan Agriculture (JA)**

JA is a federal institution founded in the 1950s, and each branch located in a rural municipality is independent. JA is a producers' cooperative, each branch has its own board of directors, management team, and staff. JA provides a range of agricultural services for the growers:

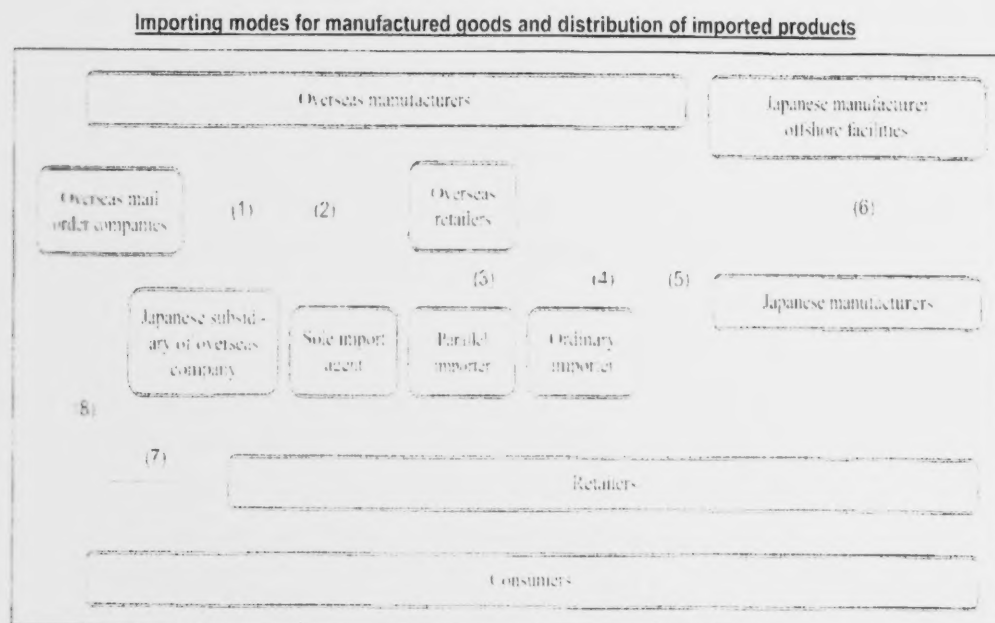
- Advisory services to better grow their crop
- Improved varieties for better production efficiency
- Grading, packaging, and freezing of production as necessary
- Marketing of production

Besides the agricultural services, JA has a retail Coop store chain that commercialize JA products and other products. JA also has a banking department and an insurance department. Farmers are members of JA. JA commercializes their production and pays them after the sales. JA retains 3% of the cost of sales for storage fee, and another 3% for freezing, when applicable. As a cooperative, profits are returned to the farmers at the end of the year according to their volume of sales.

### **6.4 Traders**

Traders for the food industry are specialized in specific sectors. Haskap traders purchase generally the fruit at the private auctions (Figure 2), and sell it to the processors according to their needs. The traders are in charge to source the required amount of berries for the processors. These traders would be the primary industry contact in Hokkaido for the Canadian producers. They would take the necessary steps to import the product and target it to a specific processor.

Saskatchewan producers will need to develop collaborations with Hokkaido processors in order to have a common understanding of the quality requirements. The next step, to bring the berries to the market, has to include the trader who will take care of all import requirements (Figure 3).

**Figure 3: Importing manufactured goods into Japan**

(1) Japanese subsidiary of overseas company	Overseas manufacturer or retailer sets up a subsidiary in Japan to handle imports and sales of its own products.
(2) Sole import agent	Japanese company signs a sole import agent contract with a foreign company, giving the agent exclusive sales rights for Japan, and allowing it to import and resell the foreign company's products.
(3) Parallel imports	Products are purchased from foreign retailers and imported for sale separately from authorized import agents.
(4) Spot imports	Importer makes spot purchases from the foreign maker for import and resale.
(5) Development imports	Japanese wholesaler or retailer develops product specifications and outsources production to an overseas plant, then imports the product and markets it under a private brand label.
(6) Reverse imports (imports from offshore plants)	Japanese manufacturer produces goods at its own offshore facility (including those operated under joint ventures with local companies), and imports those products for sale as part of its regular product.
(7) Small-lot imports	Small- or medium-sized retailer or wholesaler makes small-lot purchases from an overseas mail order company and imports the product directly for resale to consumers or third parties.
(8) Individual imports	Individuals make purchases directly from overseas mail order catalogs and import the merchandise for their personal use.

Source: Canadian Trade Commissioner, Sapporo, personal communication.

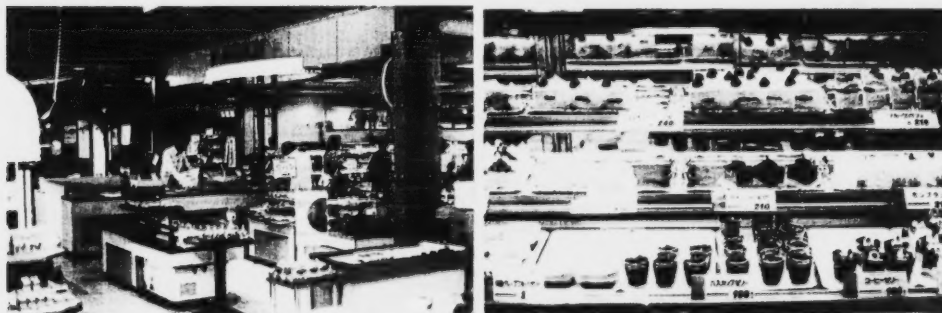


## 6.5 Processors

Three processors dominate the haskap industry in Hokkaido:

- Mitsuboshi, based in Tomakomai. Their most famous haskap product is a rolled cake with a jam filling. The company has processed 40 tons of berries annually for the past few years.
- Hori Confectionery, based in Bibai. Hori's main product is melon (cantaloupe) jelly. They produce a haskap jelly with a few whole fruits imbedded in the jelly, and also concentrated juice.
- Morimoto, based in Chitose. The company is strong in the jam, jelly, and cake sectors.

These three companies have their own confectionery stores. Mitsuboshi stores are present in most large cities in Hokkaido. These stores offer cakes, cookies, jams, jellies, and sweets in a fancy environment. Large stores offer a sit-down area and a deli counter where are sold freshly baked cakes and pastries.



Picture 17 and 18: Mitsuboshi confectionary store in Tomakomai

These three processors are the main players in the haskap industry chain of Hokkaido. Their volume of sales is in direct relation with the total volume of haskap sold for processing. This implies that the market development of haskap depends on them. There is little chance that growers could get any funding from the Japanese government to promote their industry, and the industry expansion depends on the ability of these processors to develop additional markets.



## 7 Market Analysis, the Opportunities for Canadian Haskap

### 7.1 Haskap Market History in Hokkaido

In the 1980s, the haskap market was growing along with the consumers' interest for this native berry. Growers were able to obtain about ¥3,000 to ¥4,000 (\$27 to \$36CND) per Kg. of fresh fruits, and acreage grew to 167ha, generating a surplus of supply, resulting in a drop in prices to ¥1,000 (\$9.08CND) per Kg. Many growers exited the haskap market and the orchard area stabilized at 70ha in the late 90s. The growth of the confectionery market allowed the growers to increase the orchard area to 85 ha in 2005, with the berry price remaining at an average of ¥1,114 (\$10.12CND) per Kg for the grade B berries, to ¥2,182 (\$19.82CND) per Kg for the grade AAA berries (Figure 4).

Figure 4: Evolution of haskap price in Hokkaido, according to fruit grade, from 1999 to 2006

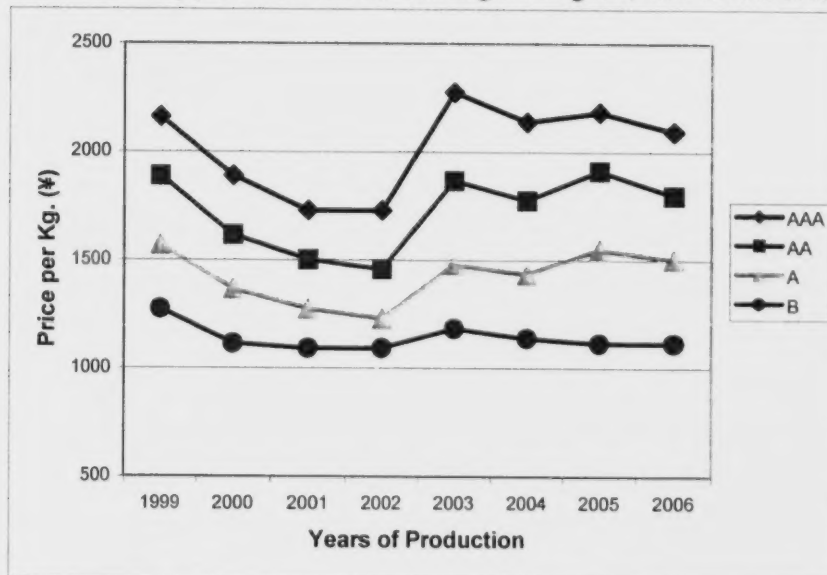
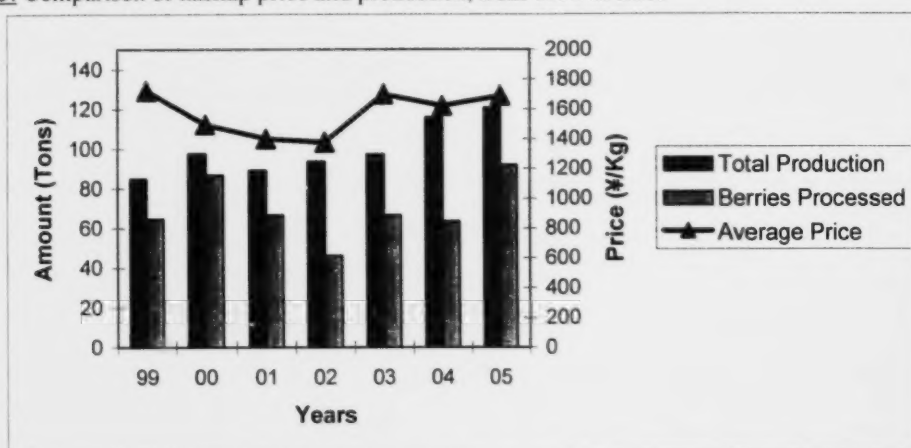


Figure 5 shows the evolution of the haskap price since 1999. After a general slow-down of the industry, and the economic recession in 2001-2002, the health TV show boosted the sales, driving the price of AAA haskap up to ¥2,273 (\$20.65CND) per Kg.

This reaction from the public following the TV show reveals that there is a potential market that has not been reached by the haskap industry. The industry would need to invest in marketing and promotion of haskap products to expand the market.

Figure 5: Comparison of haskap price and production, from 1999 to 2005



The quantity of haskap produced in Hokkaido, has been slowly increasing, from 64 tons in 1999, to 92 tons in 2005. Haskap prices and the amount of haskap processed have recovered since the historical low levels of 2002 and increased until 2005. This market growth is partially the result of the unexpected advertising by the 2002 health show meaning the Japanese consumer is well receptive and responsive to health matters. This approach may be good to use to promote the haskap products. However, the haskap industry is a small industry group and not organized to build a general haskap promotion strategy and that government funding is very limited, it is unlikely the industry will receive help promoting its sector in the near future. Actual sales are mostly done within the Hokkaido region, and gaining a share of the market in Japan mainland will be difficult without any promotion.

## 7.2 The Canadian Haskap as a Potential New Product

### - The potential use of Canadian haskap

The Hokkaido haskap industry is selling its products as high quality, high priced, souvenir delicacies. One of the quality components of the food in Japan is to be able to trace the origins of

its compounds. Hokkaido has a reputation of producing good quality agricultural products. A haskap product purchased as a souvenir from Hokkaido which would have a 50% Canadian product may raise questions from the consumer. If the use of Canadian haskap for current confectionary products is jeopardized, Canadian growers will have to develop a strategy in collaboration with the processors to create new Canadian products for the Hokkaido market. The development of new products would take time, and this shows that marketing large quantities of haskap to Japan may not be possible in the short term.

#### **- The exported product**

Production methods in Canada will involve mechanical harvesting, and this practice, not used in Hokkaido, may generate arguments against the Canadian production. The mechanically harvested berries might be graded in the lowest B category and would be considered a lower quality than the manually harvested berries.

The unfavourable grading of the berries, along with the cost of shipping berries to Japan shows that Canadian haskap should be processed prior to exporting to Japan. It is conceivable to commercialize a frozen purée in small portions of a few grams, individually frozen; or a concentrated juice, or a lyophilized extract.

### **7.3 Pricing**

The choice of the product marketed will affect the pricing strategy. If whole frozen berries are shipped to Japan, the purchase price would be conditional on the grading of the berries. Even if the berries have a good taste, have no pesticide residue, their appearance will not be as perfect as the berries produced in Japan, which are sorted twice manually, before being sold. The mechanically harvested Canadian berries will most likely fall in the lowest grade B category, which is priced at the lowest. Canadian growers would not be able to get a premium price for their production and would have to take the proposed price corresponding to the grade B. Once the Canadian product is accepted with a specific image, it might be difficult to improve its image.

If the haskap is commercialized as a pre-processed product, it gives more flexibility in the pricing strategy. Price could be negotiated according to the quality of the product, and not

limited to a visual grading. The pre-processing will give an additional value to the Canadian product.

#### **7.4 Place**

##### **- Hokkaido:**

The marketing place for the delicacies made of Canadian haskap will differ according to the strategy followed. If local processors decide to incorporate Canadian haskap in their regular production, there will be no change in the current positioning of haskap products. Once the Hokkaido product with Canadian haskap is accepted by the public, the market will continue to grow slowly, and might eventually reach mainland Japan.

##### **- Japan:**

If specialty Canadian pastries are made using Canadian haskap, the marketing strategy would be quite different. The product would still have healthy features and would be marketed as a luxury product, but Hokkaido might not be the only distribution market. The Canadian haskap would be in competition in Hokkaido with local haskap product, and would likely be priced lower to reach a different population segment. Canadian haskap might give the Hokkaido processors the opportunity to develop the distribution of some of their haskap products in Japan mainland.

##### **- North America**

The production of a new berry product in Canada will arouse a lot of interest. Haskap has the advantage of very early flowering, and the fruit production will occur before the Saskatoon berry, the strawberry and the raspberry. It is important to have fresh berries available at the beginning of the summer season to use in ice cream, pies and other delicacies cherished by the consumers when warm days are back. There is a great potential for haskap in North America, with a similar strategic positioning as the one developed in Hokkaido.

#### **7.5 Positioning of Haskap from Hokkaido, China, and Canada**

##### **- The Hokkaido haskap:**

The Hokkaido confectionery market has high expectations on fruit quality, and local growers invest a lot of time in harvesting and in sorting the berries to deliver a premium product. This market shows great analogies with the Saskatoon berry market in Saskatchewan.

**Table 3: Comparison of the haskap and Saskatoon berry industries**

Haskap in Hokkaido	Saskatoon Berry in Saskatchewan
<ul style="list-style-type: none"> <li>- Berry traditionally picked by aboriginal people</li> <li>- Plant mostly grown locally</li> <li>- Regular orchards and U-Pick orchards</li> <li>- Many small size orchards, and a few processors</li> <li>- Fresh berries sold on local market</li> <li>- Processed products sold as gift items</li> <li>- Processed products prices very high (\$5.50 per 100 grams of jam)</li> <li>- Products sold locally</li> <li>- Potential development in the health food sector</li> </ul>	<ul style="list-style-type: none"> <li>- Berry traditionally picked by aboriginal people</li> <li>- Plant mostly grown locally</li> <li>- Regular orchards and U-Pick orchards</li> <li>- Many small size orchards, and a few processors</li> <li>- Processed products sold as gift items</li> <li>- Processed products priced at a medium level (\$2.50 per 100 grams of jam)</li> <li>- Products sold locally, and expanding national and international market</li> </ul>

**- Haskap from China:**

Processors in Hokkaido have already used imported haskap from China. The processors found that Chinese berries are not consistent in size and in ripening stage. Berries are not as sweet as the Japanese selections. The cost of production of Chinese haskap is lower than the Japanese, but the quality does not meet the Hokkaido processors' expectations. However, Chinese haskap appears to be rich in medicinal compounds, and it might, in the near future, have a specific positioning in the specific health food sector segment of the market.

**- Haskap from Canada:**

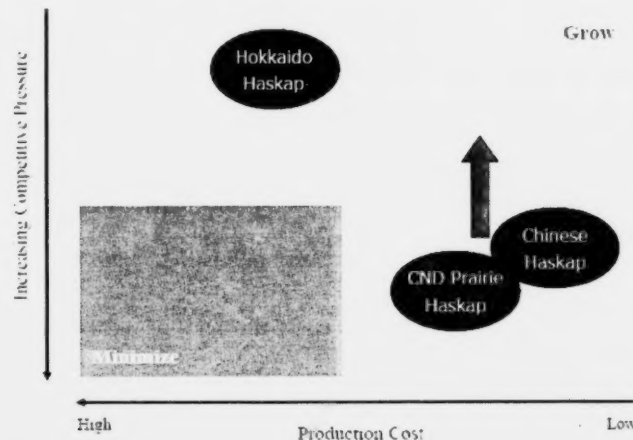
Canadian haskap will have a higher cost of production than the Chinese haskap. It will benefit from a good Canadian agricultural products image, but it will have to compete with improving production from China, and a from a growing local Hokkaido production.

Haskap production is considered today as a good agriculture diversification product in various regions of North America. Therefore, Saskatchewan producers will not be the only ones to attempt to reach the Japanese market. Haskap is a burgeoning sector in North America, and it is difficult to assess the acreage of orchards being planted. Saskatchewan growers will most likely experience a strong competition from North American growers.

### - Positioning of haskap products in Hokkaido:

The Hokkaido haskap production is currently a monopoly situation. When Canadian haskap will reach the market, it will share the same strategy quadrant that Chinese haskap, with a low production cost and a significant competitive pressure (Figure 6).

Figure 6: International haskap industry strategy in Hokkaido



In order to move to the upper right quadrant, the Chinese and Canadian haskap have to find their specific niche, where competition with the local production is weaker. The research shows that the bitterness of the Chinese fruit reflects a higher content in antioxidants, which is used by the Chinese industry to target the health food sector.

Canada has to build on the good taste of its crop in order to create additional products that could be marketed as haskap confectionary products 'Canadian Style'. In the long term, these products could allow Hokkaido confectionery industry to gain additional market share with the customers in Honshu, without compromising the Hokkaido haskap value chain. The addition of these products would benefit both Canadian producers and Hokkaido processors. It is important to respect and preserve the Hokkaido production, as a premium traditional fruit resource. This production is and will remain the core of the haskap industry in Japan.

As a parallel, we can use the wine industry as an example. Traditionally, wines were produced mostly in western Europe, and more specifically in France where the Bordeaux and Burgundy regions have supremacy. The past 20 years have seen the emergence and growth of new wine



regions in the 'New World', with the South Australian, the Californian, or the Okanagan wines. Californian wines have scared the French industry and the improving Californian wines are creating their own market niche, pushing the French wines in to a gourmet category.

Chinese haskap will most likely be positioned in the health food sector; therefore contributing to improve the image of the haskap industry.

Canadian haskap might show some difference in shape and taste with the Hokkaido locally grown berries. Hokkaido has already haskap plants with a wide range of taste from the wild plants selections to the newly grown cultivars, and the Canadian fruits will fit in this range. The availability of the additional Canadian fruits on the Hokkaido market will allow processors to differentiate their production and access to new markets.

**- Positioning of haskap products in North America:**

The North American haskap market has to be developed. The berry is unknown in North America, and people are not used to the taste of this berry. The new haskap industry could be compared with the Saskatoon berry industry 15 years ago. It will take time for the haskap industry group to build their niche.

There might be a potential to develop a niche in North American with fine food restaurants, confectioneries, or ice cream places. They need a berry that arrives early on the market in summer. The earliness of the berry would create its own temporal niche.

Marketing haskap processed products, as jam, jelly, juice, will encounter more competition than marketing fresh berries. Haskap products will be in direct competition with other similar berry products.

## **8 Environment Analysis**

### **8.1 Strengths**

#### **8.1.1 Existing market in Japan**

The Hokkaido haskap industry is well organized, and its products are established in the gourmet, gift and souvenir market segment. Canadian haskap production could either complement Hokkaido fruit production when needed, or provide Hokkaido processors with the opportunity to expand their market to Japan mainland, with new lines of confectionery products.

#### **8.1.2 Plant adapted to the prairie conditions**

A number of varieties originated from various places in the world have been introduced and grow in Saskatoon: 1. Plants from Eastern Europe are not suitable to agriculture. 2. Plants from Russia are productive with early and uniform maturing. 3. Plants from Northern Asia have a good berry flavour, and a late but uniform ripening. 4. Plants from Hokkaido have a large fruit size and a good flavour, and are later maturing.

#### **8.1.3 Enthusiastic Saskatchewan growers**

Haskap Producers Association

Parkland Agroforestry Products Inc.

Saskatchewan Fruit Growers Association

#### **8.1.4 Strong research programs in North America**

Haskap breeding is performed at the Oregon State University by Professor Emeritus Dr. Maxine Thompson, and at the U of S, by Dr. Bob Bors, with the Fruit Breeding and Research Program, Department of Plant Sciences.

Research in haskap breeding in North America emphasize the sweetness, plumpness, early and even maturing, and skin resistance. The skin of some of the fruits tends to stay attached to the fruit peduncle at picking, making a bleeding scar on the fruit, which causes it to lose its juice. These selection criteria should allow the fruit to be harvested mechanically, and it will suit the processing industry.



## **8.2 Weaknesses**

### **8.2.1 Little history of international haskap trade**

Hokkaido processors have outsourced haskap from China, but encountered problems with the grading of the production. Their high expectations on berry quality were not met by the Chinese production. Haskap produced in Canada would be different than in Hokkaido. Local North American breeding programs will allow producers to have access to very good haskap varieties, but mechanical harvesting might not achieve the same level of grading as the manual harvesting and sorting in Hokkaido. Stakeholders in Hokkaido and Canada will have to keep these differences in mind when assessing the quality and the value of the crop. Haskap is a new crop for NA and export regulations and legislation will need to be verified with Canadian Food Inspection Agency (CFIA).

### **8.2.2 No production in North America**

The complete Haskap sector has to be organized in NA. The initial research has been done, and the first acres have been planted. Initial production will occur in 2010 with some small quantities possibly being exported. Production will increase in further years with the increase in orchard numbers, and in the maturation of the haskap plants.

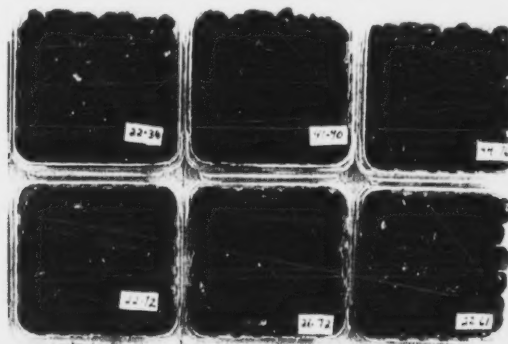
### **8.2.3 No registered pesticide in Canada for Haskap production**

Breeders at the U of S and OSU observed that haskap has some sensitivity to two pathogen fungus: Mildew and Botrytis. In order to apply pesticides to haskap plants, chemicals will have to be tested, and recommended by CFIA. Prior to chemical accreditation, haskap culture will have to be organic.

## **8.3 Opportunities**

### **8.3.1 Development of a new cultivated species in Canada**

The haskap market is a new venture for NA. Dr. Bob Bors, at the U of S has imported varieties from various places around the world and selected cultivars adapted to the prairie's growing conditions (Picture 19) The selected cultivars grown in the university nurseries are showing a consistent oblong fruit shape (Picture2), and a promising production of 2 to 5kg per bush.



Picture 19: Example of fruit shape variation according to origin (B. Bors)

Grower groups are starting to show interest in the production of haskap and two groups in Saskatchewan have started the plantation of haskap in 2006. A haskap bush will require 3 years of development before production. The recommended plantation density in Saskatchewan is 620 bushes per acre, allowing for a production of 1.24 ton per acre, or 3 tons per hectare. Haskap brings to Saskatchewan the possibility for growers to diversify their fruit production. At these northern latitudes, growing season is short and only a few fruits are able to reach maturity. Haskap is remarkable for being the first to ripen in the season. It is ready to be harvested in early July in Saskatchewan, before the Saskatoon berry, and the strawberry, August for the raspberry, and late August to September for the cherries and the larger fruits.

### 8.3.2 Development of a new food-processing sector

Japan consumers are used to a wide range of products made of, or flavoured with haskap. Some products are the usual derivatives of berries known in NA, such as juice, jam, jelly, sweets or flavoured chocolate, others are more unusual like flavoured noodles or pastries. Saskatchewan will benefit from primary production of haskap as well as further processing, which would bring additional value to the sector. Haskap berries could be processed into a concentrated juice, or a purée that would be frozen, or a dehydrated powder that could be marketed to processors. The berry processing industry is not as developed in NA as in Japan. Japan has more confectionary products such as cakes, and cookies using berry filling. There might be an opportunity to develop this sector with

haskap, using the knowledge developed in Japan. This expertise could even be extended to the rest of the berry market in NA.

### **8.3.3 Development of new markets in North America**

Either as a fruit, pulp, or juice, haskap could be used readily in NA in fruit juice, jam, jelly, pie filling or ice cream. The flavour of haskap is close to the existing popular berry products on the market to ensure its success. Haskap with its early maturing will provide fresh fruits for pastries, cakes and ice cream for all restaurants, and cafés' customers, with a sweet tooth.

### **8.3.4 Increasing usage of fresh haskap berries and derived products in Japan**

Outsourcing haskap will increase the supply and will allow Japanese consumers to have better access to the product either raw or processed. The increased availability would allow Hokkaido processors to market new products on their regular market, and also develop additional markets in Japanese regions other than Hokkaido.

## **8.4 Threats**

### **8.4.1 Competition with existing berry trade between NA and Japan**

The blueberry trade has been steady, at 900 tons per year since 1999. A growing haskap market in Honshu will likely compete with the blueberry market, especially in the processed berries sector.

### **8.4.2 Introduction of new varieties in the Japanese market**

Varieties grown in Saskatchewan are not the same as those grown in Hokkaido. The Japanese consumer is very conservative, and uses sight and taste when assessing new food products. The introduction of the Canadian varieties will need to be gradual, to get the consumer used to the new varieties. Shape, colour, taste, sweetness, pH, and fruit skin strength will be important factors for the Japanese in accepting these new varieties.

### **8.4.3 Possible decrease in haskap prices in Japan with increased supply**

Supply of haskap will increase with the arrival of the Canadian varieties. To keep prices stable, demand will need to increase. If the demand remains stable or increases less than the supply, prices could drop, and damage the industry. Haskap market history in Hokkaido has shown that growers are sensitive to prices. In the 90s, a surplus of supply,

and a drop in prices from ¥3,000 (\$27.30CND) to ¥1,000 (\$9.10CND) per Kg of fresh fruits, resulted in a lack of interest from growers and a drop in acreage from 167 ha to 70 ha.

## 9 Sensitivity analysis

### 9.1 Financials for haskap production in the Tomakomai area

- Initial investment for installation of a new orchard (cost per 0.1ha)

**Table 4:** Cost for installation of a new haskap orchard in Hokkaido

Plantlets: 200 at ¥1,000 each	¥200,000
Fertilizer: Manure, Calcium Carbonate, Phosphorus	¥26,825
<b>Total</b>	<b>¥ 226,825</b>

Source: JA Tomakomai haskap production manual

The conversion to imperial units, from 0.1 ha to 1 acre and from Yen to Dollar is as follows:

¥ 226,825/0.1ha is equivalent to ¥918,320/acre, or \$8,287CND/acre.

- Management of an established orchard (per 0.1ha).

**Table 5:** Cost for maintaining a haskap orchard in Hokkaido

<b>Gross Income:</b>	
- Quantity harvested (kg)	350
- Price (¥ per kg) - Average 1999-2005 -	1,531
<b>Revenue</b>	<b>¥ 535,850</b>
<b>Expenses:</b>	
- Fertilizer	18,329
- Pesticide & Herbicide	4,170
- Packaging	10,421
- Energy (Gas)	918
- Equipment	43,400
- Labour (80 hours @ ¥ 700 per hour)	56,000
- Depreciation	22,774
- Administration & Transportation	70,583
<b>Total Expenses</b>	<b>¥ 226,595</b>
<b>Net Income</b>	<b>¥ 309,255</b>
Time spent with orchard management (hours)	289
Manager's revenue (per hour base)	¥ 1,070
Net Revenue per kg of berry sold	¥ 647

Source: JA Tomakomai haskap production manual

#### Conversion to imperial units:

Revenue=	¥ 535,850/0.1ha	¥2,169,433/acre	\$19,577 CND/acre
Total Expense=	¥ 226,595/0.1ha	¥917,389/acre	\$8,278 CND/acre
Net Income=	¥ 309,255/0.1ha	¥1,252,044/acre	\$11,298 CND/acre

## **9.2 Cost for developing a haskap orchard in Saskatchewan**

There is no example yet in the Canadian prairies of the installation of a haskap orchard. Parkland Agroforestry Products Inc. has estimated this cost to \$6,000/acre. This cost decomposes as follows:

- Incorporation of a business, development of a business plan, shareholder agreement
- Cost of leasing land
- Land preparation for pre-planting
- Soil and water testing
- Purchasing of plantlets
- Planting
- Installing drip irrigation system
- Maintaining orchard for 3 years
- Purchasing and installing bird netting

## **9.3 Production assessment**

- Haskap are planted at a density of 620 plants per acre to allow mechanical harvesting.
- Yield increases as the plant approaches maturity. A Haskap bush should bear 1 to 2 kg of berries after the third season, and reach 6 kg at maturity. Production would increase from 1,240kg/acre (2,728lbs/acre) to a maximum of 3,720kg/acre (8,184lbs/acre) at maturity.

## **9.4 Production Cost Assessment**

Production cost is unknown for haskap, and costs reported for growing blueberry in the Fraser valley (4) have been used to develop this simulation. The price used in this model is the 2006 blueberry price: \$1.78/kg of fresh berry. It reflects the price that a producer would receive by selling his haskap production to a processing plant or a trading company.

Table 6 lists all projected expenses for maintaining an orchard in the prairies.

The assumptions are as follows:

- The orchard produces 1,240kg of berries per acre (2kg per haskap bush)
- The berry price is \$1.78/kg

Total expenses including labour are estimated to \$2,516 per acre of haskap orchard. Considering the revenue of \$2,200 per acre, the operation leads to a deficit of \$-316 per acre.

Table 6: Budget for haskap production in the prairies

**Sample Budget for Haskap Berry Production**  
**Machine Harvested, Saskatchewan Northern Prairie**  
**1 acre**

<b>Projected Income</b>	<b>Quantity</b>	<b>Price</b>	<b>Unit</b>	<b>Value</b>
Harvest	1,240	1,78	kg	\$ 2,200
<b>Projected Expenses</b>				
Fertilizer 5-20-25	480	0,50	kg	244
Funginex (2X)	2	41	l	83
Sawdust (every 3rd year)	9	38	unit	342
<b>Labour</b>				
Harvesting (2 picks)	13	12	hr	162
Machine Labour	1	13	hr	19
Bird Control	0			200
Custom work: Pruning	65	9	hr	585
<b>Other</b>				
Hive rental	4	50	unit	200
Fuel Cost				150
Machinery R&M				380
Irrigation				50
Marketing				100
Total expenses				\$ 2,516
<b>Contribution Margin (gross income less direct expense)</b>				<b>\$ -316</b>

Table 7: Evolution of the contribution margin according to the yield of the orchard

<b>Yield (kg/acre)</b>	<b>Contribution Margin at target price of \$1.78/kg</b>
1,000	\$-736
<b>1,240</b>	<b>\$-316</b>
2,000	\$1,044
3,000	\$2,824
4,000	\$4,604

The model developed in table 7 shows that a production of 2kg per Haskap bush (1,240kg per acre) leads to a deficit of \$-316 per year. Therefore, selling berries to the local market at the price of \$1.78/kg would be feasible for an established orchard with higher yields and minimal liabilities. The blueberry price is too low for haskap production in a newly established orchard.



We have shown that a haskap orchard has a potential to produce between 1,240kg/acre to a maximum of 3,720kg/acre. For the following part of the study, we will consider the example of a haskap orchard with a low production of 1,600kg/acre.

**Table 8:** Evolution of the contribution margin according to the haskap market price

Price (\$/kg)	Contribution Margin at target yield of 1,600kg/acre	
1.00	\$	-916
1.60 <sup>(a)</sup>	\$	0
2.00	\$	684
3.00	\$	2284
5.00	\$	5484

a: Break-even price

Table 8 shows that a selling price of \$3/kg would allow a contribution margin of \$2,284 and therefore a pay back period of 3 years. At this price, the operation becomes worth the investment, and Saskatchewan haskap growers should not accept a lower price.

### 9.5 Exporting frozen Haskap berries to Japan

Haskap Services projects the purchasing price of frozen Haskap berries to be \$10/kg. Similarly, the price of blueberries ranges from \$1 to \$32/kg according to the season, with an average of \$10/kg. This shows that the blueberry model fits well with the Haskap situation.

The calculation below is performed under the following assumptions:

- Haskap production of 1,600kg/acre
- 1,000kg/acre suitable for the export market
- 600kg/acre discarded, or not marketed

**Table 9:** Budget for exporting haskap berries to Japan

<b>Gross revenue</b>		\$10,000
<b>Production cost</b>	\$ 2,516	
<b>Processing Cost</b>		
Packaging, bags of 5kg each <sup>(a)</sup>	\$ 286	
Snap freezing, at \$1.52/kg <sup>(b)</sup>	\$ 1,520	
<b>Shipping Cost</b>		
Orchard to Saskatoon	\$ 100	
Saskatoon to Japan, at 0.50/kg, frozen	\$ 500	
Total Processing & Shipping costs	\$ 2,406	
<b>Net Revenue</b>		\$ 5,078

a: Saskatchewan Abilities Council, personal communication

b: VersaCold Saskatoon, personal communication

The Saskatchewan Haskap producer could increase the crop value by exporting to Japan. The above projection includes contracting the packaging and freezing of the berries to two Saskatoon businesses and shipping the frozen berries to Japan. The net margin for the producer would then reach \$5,078/ton, or \$5.07 per kg of fresh berries.

Table 10: Evolution of Net Margin according to the orchard yield

Orchard Yield per acre: (kg of haskap exported)	Net Margin at export price of \$10.00/kg
1,000	\$ 5,077
1,600	\$ 9,633
2,000	\$ 12,671
3,000	\$ 20,265
4,000	\$ 27,859

If the total amount of haskap produced in a new orchard (production of 1600kg/ha) is exported, the net margin would reach \$9,633/1,600kg, or **\$6.02 per kg of fresh berries**. A mature orchard would be able to produce 4,000kg/acre for export and generate a margin of \$27,859 or **\$6.96 per kg of fresh berries**.

The above model includes the following limitations:

- The administration fees for international trading are not included.
- The food inspection fees are not included.
- The producer acts as a broker and is responsible for the processing and shipping to Japan

## 9.6 Conclusion of the Financial Analysis

In North America, haskap matures earlier than most berries and fruits, and early fresh fruit has the potential to sell at higher prices. Fresh haskap would be welcomed at high end restaurants, bakeries, or ice-cream stores. However, haskap would target the same market as the raspberry or the blueberry, and it should not be priced much higher than these berries.

On the North American market, selling haskap at the blueberry price would not be feasible for producers with new orchards, and it is recommended that haskap not be sold locally at a price less than \$3.00/kg.

Exporting haskap to Japan would allow Saskatchewan producers to increase their volume of sales. The selling price, fruits delivered frozen in Japan, would be similar to the price offered for blueberries at \$10.00 per kg. This price should include all processing, and administration fees and growers should not expect to receive more than \$5.07/kg to \$6.96/kg, depending on the degree of maturity of their orchard.

## 10 Conclusion and Recommendations for the Saskatchewan Haskap Industry

### 10.1 Short Term Development

The Hokkaido haskap market is very sensitive. It has seen a large drop in the early 1980s, following a drop in prices. The market is now recovering, driven by the processors. The total Hokkaido production of haskap berries increased from 85 tons in 1999 to 120 tons of in 2005. Haskap involves a labour intensive harvest, and only a few young farmers are interested in starting new orchards. Supply is limited by manual harvesting and shortage of labour. Supply is sufficient for the actual Hokkaido market, and the actual potential to supply additional haskap from Canada to Japan is low. The market could not use more than 50 tons/year of Canadian haskap. Forty acres of haskap orchard producing the minimal yield of 1,240 kg/acre will be sufficient to fulfill this demand.

<b>Recommendation # 1:</b>
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Plan for a conservative development and expansion of the orchards, in order to wait for the Japanese market to grow, and for the North American market to be developed. Fifty tons of additional haskap on the international market is sufficient for the current stage of the market
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The size of the processed haskap berries' market is ~~small~~: 92 tons of berries were processed in 2005. A wide range of confectionery products are commercialized in Hokkaido for the gift market. Some of these products are elaborated and there is almost no product commercialized for the day-to-day use. Like the Saskatoon berry industry in Saskatchewan, the Hokkaido haskap industry is at an infancy stage. The haskap industry group in Hokkaido encounters a lot of problems to get funding from the different levels of the government. The industry will have to rely on its own strengths to promote haskap to new market sectors.

<b>Recommendation # 2:</b>
----------------------------

Build collaborations with the Hokkaido haskap processor to develop commercial and promotion strategies to reach consumers in the Japan main land
--

**Recommendation # 3:**

Build collaborations with the main three processors in Hokkaido, to assess the possibility to develop new haskap confectionary products specially made with Canadian haskap. These new products would be commercialized to new consumer segments in Hokkaido and the Japan main land to avoid direct competition with established products

Saskatchewan growers will be in competition with new haskap growers from various places in Canada. News groups are getting organized in almost all provinces, from Quebec to British Columbia

**Recommendation # 4:**

Build interest in haskap to induce market demand in Canada

**Recommendation # 5:**

Start to build a list of interested customers

**Recommendation # 6:**

Engage in further business development studies, to assess the potential North American market, and to assess the possibilities to develop haskap processing in Saskatchewan.

### **10.2 Medium Term Development**

Haskap farm-gate price in Canada has to be higher than the blueberry price to cover all expenses. \$1.78 per kg (blueberry price) is not sufficient to cover expenses of a young haskap orchard producing 1,240 kg/acre.

**Recommendation # 7:**

Position haskap with a farm-gate price between \$2.00 and \$3.00 on the Canadian market

The quality expectations for haskap berries in Hokkaido are very high. Haskap products are highly priced, and trademarked as local products. Canadian agricultural products benefit from a perception of good quality in Japan. However, Canadian haskap berries would likely be marketed as a B-grade in Hokkaido because they are machine-harvested and not manually-

harvested. In 2006, B-grade berries were traded at \$11.00 per kg. It is essential that Canadian haskap commercialized to Japan is sold at \$10.00 per kg or higher in order to cover cost of production and processing, and to allow a reasonable margin.

**Recommendation # 8:**

Build a close relationship with Hokkaido processors, and build confidence in the Canadian berry quality. Develop an understanding of the reliability of the mechanical harvesting.

**Recommendation # 9:**

Do not commercialize Canadian haskap as a fresh product in Hokkaido. The expense would be greater than the revenue, making this option not feasible.

**Recommendation # 10:**

Strive for high quality standards, according to the Japanese definition, in order to place the Canadian haskap ahead of the competition.

**Recommendation # 11:**

Rather than exporting frozen berries to Japan, develop a pre-processed product well adapted to exporting, and also adapted to the needs of the processors.

**Recommendation # 12:**

Consider vertical integration to perform a first stage of berry processing on-farm, and to retain additional returns.

Haskap is traditionally known in Japan as a healthy product. The tartness taste of some wild berries seems to be linked to the content in anti-oxidants and anti-carcinogen compounds. Chinese haskap is richer in these compounds, than present Japanese and Canadian cultivars.

**Recommendation # 13:**

Collaborate with Dr. Bors in Saskatoon, and with Dr. Ukai in Hakodate to test new varieties, for content in health compounds.

The health food sector might not be the best fit for the Canadian haskap due to the sweeter taste of the berry. Minimum marketing effort should be allocated to this sector.

### **10.3 Long Term Development**

Japan plans to install a new law on labelling of processed products. Japan-made products will have to display clearly their content in raw products that come from other countries.

<b>Recommendation # 14:</b>
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Develop a strategy to use Canadian haskap in specific delicacies in Japan as the new regulations will make it difficult to market a Hokkaido product which contains Canadian haskap content.
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The Hokkaido haskap industry is complex, with at least 6 different levels, 150 producers and only 3 processors.

<b>Recommendation # 15:</b>
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Keep the Canadian haskap industry simple and integrated. The export price of Canadian haskap frozen or pre-processed will not be sustainable for an industry with many players.
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- (3) Fruit and nuts outlook. *Economic Research Service, USDA*. FTS-305, July 30, 2003
- (4) Blueberry Full Production – Machine Harvested Fraser Valley. British Columbia Ministry of Agriculture, Summer 2001.

## List of Abbreviations

CFIA: Canadian Food Inspection Agency

JA: Japan Agriculture

PAP: Parkland Agroforestry Products Inc.

SAF: Saskatchewan Agriculture and Food

U of S: University of Saskatchewan

## Appendixes

Appendix 1: Quantities of Haskap grown, harvested and processed in Hokkaido Island.

Municipalities			1999	2000	2001	2002	2003	2004	2005
CHITOSE	Area cultivated	ha	25.0	25.0	25.0	23.0	23.0	19.6	19.6
		ha							
	Harvested	t	20.0	19.0	24.0	28.0	16.0	13.0	20.0
		t							
	Amount: raw	t	16.0	19.0	21.0	28.0	16.0	13.0	17.0
		t							
	Amount: processed	t	16.0	16.0	21.0		16.0	13.0	17.0
		t							
OTOBE	Area cultivated	ha							5.0
		ha							
	Harvested	t							0.3
		t							
	Amount: raw	t							0.3
		t							
	Amount: processed	t							
		t							
YOICHI	Area cultivated	ha					0.1		
		ha							
	Harvested	t					0.3		
		t							
	Amount: raw	t					0.3		
		t							
	Amount: processed	t					0.3		
		t							
ANAIGAWA	Area cultivated	ha	0.1	0.1	0.1	0.1		0.1	0.1
		ha							
	Harvested	t	0.4	0.3	0.3	0.3		0.3	0.3
		t							
	Amount: raw	t	0.2	0.3	0.3	0.3		0.3	0.3
		t							
	Amount: processed	t	0.2	0.3	0.3			0.3	0.3
		t							
YUBARI	Area cultivated	ha	2.9	2.8	2.9				
		ha							
	Harvested	t	1.0	0.8	0.8				
		t							
	Amount: raw	t	1.0	0.8	0.8				
		t							
	Amount: processed	t	1.0	0.8	0.8				
		t							
BIBAI	Area cultivated	ha	15.0	14.8	16.1	16.0	16.0	13.9	14.3
		ha							
	Harvested	t	21.7	20.7	22.4	40.5	45.3	36.7	39.1
		t							
	Amount: raw	t	19.2	20.7	20.8	36.7	42.0	36.7	39.1
		t							
	Amount: processed	t	19.2	27.1	23.8	26.8	30.0	3.4	39.1
		t							
NAYORO	Area cultivated	ha	7.3	7.8	7.7	7.5	7.2	7.2	7.2
		ha					0.0		
	Harvested	t	26.0	26.0	12.0	10.0	13.0	24.0	20.0
		t							
	Amount: raw	t	13.0	25.0	3.0	8.0	17.0	24.0	20.0
		t							
	Amount: processed	t	13.0	25.0	3.0	8.0	17.0	24.0	20.0
		t							
BIEI	Area cultivated	ha						3.5	3.5
		ha							
	Harvested	t						3.5	3.5
		t							
	Amount: raw	t						3.5	3.5
		t							
	Amount: processed	t						3.5	3.5
		t							
KAMIFURANO	Area cultivated	ha						8.2	8.2
		ha							
	Harvested	t						11.5	6.4
		t							
	Amount: raw	t						11.5	6.4
		t							
	Amount: processed	t						11.5	6.4
		t							
NAKA-FURANO	Area cultivated	ha						0.2	0.2
		ha							
	Harvested	t							0.4
		t							
	Amount: raw	t							0.4
		t							
	Amount: processed	t							0.4
		t							
FURANO	Area cultivated	ha						6.5	
		ha							
	Harvested	t							
		t							
	Amount: raw	t							
		t							
	Amount: processed	t							
		t							
SHO-SAMBETSU	Area cultivated	ha							0.3
		ha							
	Harvested	t							0.8
		t							
	Amount: raw	t							0.2
		t							
	Amount: processed	t							0.6
		t							

## Appendix 1(Following): Quantities of Haskap grown, harvested and processed in Hokkaido Island.

SHIRAKI (UTANOBORE)	Area	ha							0.0
	cultivated	ha							0.0
	Harvested	t							0.0
	Amount	Raw							0.0
	traded	Processed							0.0
OKETO	Area	ha		0.1	0.1	0.1	0.1	0.1	0.1
	cultivated	ha							
	Harvested	t		0.1	0.1	0.0	0.1	0.0	0.1
	Amount	Raw		0.1	0.1	0.0	0.0	0.0	0.0
	traded	Processed		0.1	0.1	0.0	0.0	0.0	0.0
ATSUGA	Area	ha	10.0	10.0	8.7	8.7	8.0	10.8	11.0
	cultivated	ha							
	Harvested	t	11.0	14.0	10.0	10.0	13.0	13.7	16.0
	Amount	Raw	11.0	14.0	10.0	10.0	13.0	13.7	16.0
	traded	Processed	6.0	8.0	7.0	7.0	9.0	9.0	
MUKAWA	Area	ha						4.0	4.0
	cultivated	ha							
	Harvested	t						0.8	0.7
	Amount	Raw						0.8	0.7
	traded	Processed						0.0	
TOMAKOMAI	Area	ha	3.0	2.7	3.0	3.0			
	cultivated	ha							
	Harvested	t	0.7	0.7	1.5	1.5			
	Amount	Raw	0.7	0.7	0.9	0.6			
	traded	Processed	0.7	0.6					
NIMIKAPPU	Area	ha	0.5	0.6	0.6				
	cultivated	ha							
	Harvested	t	0.5	2.1	1.0				
	Amount	Raw	0.5	2.1	0.0				
	traded	Processed	0.5	0.1	0.0				
HIDEIKA	Area	ha						3.5	3.5
	cultivated	ha							
	Harvested	t						7.4	4.5
	Amount	Raw						7.4	4.5
	traded	Processed						3.0	3.5
SHINTOKU	Area	ha	5.5	5.5	5.5	5.0	5.0	5.0	5.0
	cultivated	ha							
	Harvested	t	3.5	5.0	5.0	2.0	1.4	1.4	3.6
	Amount	Raw	3.5	5.0	5.0	2.0	1.4	1.4	2.8
	traded	Processed	3.0	5.0	5.0	2.0	1.4	1.4	2.8
HONBETSU	Area	ha			0.5	0.5	0.5	0.5	0.5
	cultivated	ha							
	Harvested	t			1.2	1.2	1.3	1.3	1.5
	Amount	Raw			1.2	1.2	1.3	1.3	1.5
	traded	Processed			1.2	1.2	1.3	1.3	1.5
SHIHORO	Area	ha						0.3	0.4
	cultivated	ha							
	Harvested	t						0.5	0.6
	Amount	Raw						0.5	0.6
	traded	Processed							
TAKEI	Area	ha						1.1	1.9
	cultivated	ha							
	Harvested	t						1.4	2.4
	Amount	Raw						1.4	2.4
	traded	Processed							
TOTAL	Area	ha	59.8	69.5	69.2	62.1	59.9	81.6	84.9
	cultivated	ha							
	Harvested	t	54.9	97.1	89.0	93.5	97.1	115.5	120.6
	Amount	Raw	62.5	96.4	71.5	66.0	91.5	115.8	116.1
	traded	Processed	54.5	86.7	65.6	46.1	66.5	83.4	91.8

Source: Hokkaido Government, Department of Agriculture, Agriculture Production Promotion Division

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**Appendix 3:** Schedule of meetings for the research trip**Hokkaido Trip Schedule, June 2007:**

Monday 11	Tuesday 12	Wednesday 13	Thursday 14	Friday 15	Saturday 16	Sunday 17
					Saskatoon	Sapporo
						Arrival in Sapporo Meeting with Interpreter

Monday 11	Tuesday 12	Wednesday 13	Thursday 14	Friday 15	Saturday 16	Sunday 17
Hakodate	Sapporo	Sapporo/Chitose	Tomakomai	Tomakomai	Bibai	Bibai
Trip by train to Hakodate	Return from Hakodate to Sapporo	Meeting with Prof. <b>TANAKA &amp; ARAKAWA</b> Hokkaido Food Processing Research Centre	Meeting with Ms. <b>ONISHI</b> , CEO Haskap Services Inc.	Meeting with Ms. <b>ONISHI</b> , Mr. <b>KAWASE</b> , General Manager, Haskap Services, and Dr. <b>SUZUKI</b> , Dept of Horticulture, Hokkaido University	- Meeting with Mr. <b>KOUJI</b> , Manager Hon Confectionery, Bibai. - Visit grower in Bibai area	Trip to Furano
Meeting with Prof. <b>UKAI</b> , Hokkaido Univ. of Education, Hakodate	- Meeting with Mr. <b>SHINICHI</b> , Trade Commissioner. - Meeting with Mr. <b>TOMITA</b> , Manager, Ikeden Wholesale Co.	- Meeting with Mr. <b>Kikuchi</b> , JA Chitose - Visit of the Chitose Grace Winery	- Meeting with Mr. <b>ISHIDA</b> , Mitsuboshi Confectionery - Meeting with Mr. <b>ICHIMACHI</b> , Manager, Maruzen Corp.	- Meeting with Mr. <b>NAKANO</b> , Deputy- Mayor of Tomakomai. - Visit haskap plantations in Iburi region	Free	Meeting with Ms. <b>OKUBO</b> , CEO, Kyosai Nogyo, Furano Jam.

Monday 11	Tuesday 12	Wednesday 13	Thursday 14	Friday 15	Saturday 16	Sunday 17
Bibai/Sapporo	Sapporo	Sapporo	Saskatoon			
Meeting with Mr. <b>HARADA</b> , JA Bibai.	Meeting with Mr. <b>OSAMI</b> , Sorachi Agriculture Expansion Center, Iwamizawa	Sapporo-Chitose Airport				
Return to Sapporo	Free					







